

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) An improved pump drive head [(1)] having an integrated stuffing box [(9, 60)] and comprising:

a power transmission [(3, 4)] coupled to ~~the~~ a rotating pump drive shaft [(8)] within a crude oil well;
a stuffing box [(9, 60)] to retain the pressure; and
a thrust assembly [(6)] adapted to take the tensile force exerted on said pump shaft, [(;)]

wherein ~~characterized in that~~ said power transmission comprises a tube [(5, 16; 62, 61)] arranged to be rotated coaxially with the shaft [(8)] and having at least two different diameters[(;)],

wherein ~~that~~ the rotary seals [(20; 50)] fit over the small outside diameter of the tube to establish fluid-tightness between said tube and the body [(19, 73)] of the stuffing box, the outside diameter [(51)] of the seals [(20; 50)] being smaller than the large outside diameter of said tube [(5, 16; 62, 61);] , and

wherein ~~that~~ the tube-to-shaft fit incorporates static seals [(17, 64);] and ~~that~~ the static ones [(17, 64)] and rotary ones [(20; 50)] of the seals are adapted, by virtue of a retainer ring [(22, 78)] provided, to come away along with said tube and the component parts associated with the seals inside said stuffing box [(9, 60)].

Claim 2. (Currently Amended) An improved head according to Claim 1 ~~above~~, wherein ~~characterized in that~~ the tube [(5, 62)], being rotated coaxially with the shaft, is connected with its bottom end axially to a sleeve [(16, 61)] for rotation therewith and jointly defining said large and small diameters, the small diameter locating inside the stuffing box [(9, 60)] and the tube and sleeve, once connected together, forming a unitary piece.

Claim 3. (Currently Amended) An improved head according to ~~either Claim 1 or 2~~ Claim 1, wherein ~~characterized in that~~ a rotary gasket [(24)] is provided on the bottom end [(21)] of

said tube/sleeve [(5, 16)] for rotation therewith, the outside diameter of the gasket being a labyrinth pattern [(25)].

Claim 4. (Currently Amended) An improved head according to ~~one of Claims 1, 2 and 3~~
Claim 1 above, wherein ~~characterized in that~~ said gasket [(24)] is connected to the retainer
ring [(22)] of the seals [(20; 50)] on said tube/sleeve [(5, 16)] of the stuffing box [(9)].

Claim 5. (Currently Amended) An improved head according to claim 1 ~~one of the preceding~~
~~claims~~, wherein ~~characterized in that~~ an outside-communicated tapping hole [(26)] is
provided downstream of the gasket [(24)] and/or the respective oil seals [(20)] in the
direction of the pressurized flow from the well.

Claim 6. (Currently Amended) An improved head according to claim 1 ~~one of the preceding~~
~~claims~~, wherein ~~characterized in that~~, when the rotary seals comprise packing seals
[(50)], an oil seal [(55, 88)] is provided downstream of the rotary seals and of the inlet
hole [(58, 75)] for the liquid lubricant to the packing, the packing being mounted between
said tube/rotating sleeve [(5, 16; 62, 61)] and the inner seat [(51)] of the stuffing box [(9,
60)].

Claim 7. (Currently Amended) An improved head according to claim 1 ~~one of the preceding~~
~~claims~~, wherein ~~characterized in that~~ the packing [(50)] is mounted on said rotating sleeve
[(16)] through at least one detent ring [(52)] and a pre-load spring [(53)] between the
packing and said retainer ring [(22)].

Claim 8. (Currently Amended) An improved head according to ~~one of Claims 1 to 6~~ Claim 1,
wherein ~~characterized in that~~ the packing [(50)] is mounted around the small diameter of
said tube/rotating sleeve [(61)] and is held there by at least one axial retainer ring [(79)]
and a pre-load spring [(83)] placed between the packing and the axial thrust assembly
[(18)].

Claim 9. (Currently Amended) An improved head according to ~~one of Claims 2 to 7~~ Claim 2, wherein ~~characterized in that~~ the static seals $[(17)]$ are placed for reduced radial bulk in the joint region between said tube $[(5)]$ and said sleeve $[(16)]$, and are compressed there to make a tight seal as said tube and sleeve are made fast together.

Claim 10. (Currently Amended) An improved head according to ~~one of Claims 1 to 8~~ Claim 1, wherein ~~characterized in that~~ the static seals $[(64)]$ are placed for convenient replacement in the joint region between said tube $[(62)]$ and the shaft $[(8)]$, and make a tight fit within the skirt $[(63)]$ of the top cover $[(28)]$.

Claim 11. (Currently Amended) An improved head according to claim 1 ~~one of the preceding claims~~, wherein ~~characterized in that~~ said tube $[(5, 62)]$ is connected to the thrust assembly $[(6)]$ for rotation therewith by a rotating hub $[(27)]$ held in place by a guiding tighten-down means.

Claim 12. (Currently Amended) An improved head according to Claim 11 ~~above~~, wherein ~~characterized in that~~ said guiding tighten-down means comprises a rolling thrust bearing $[(31)]$ and a bell $[(30)]$ enclosing said hub $[(27)]$ and said thrust bearing.

Claim 13. (Currently Amended) An improved head according to Claim 11 ~~above~~, wherein ~~characterized in that~~ said guiding tighten-down means comprises a rolling thrust bearing $[(31)]$ disposed in the upper portion $[(70)]$ of the drive housing $[(12)]$ and a bell $[(71)]$ covering said hub $[(27)]$ and thrust bearing.

Claim 14. (Currently Amended) An improved head according to Claim 11 ~~above~~, wherein ~~characterized in that~~ said hub is formed on its inside diameter with an axial slot $[(34)]$ for pulling out the connection tongue $[(13)]$ between said tube $[(5)]$ and the drive.

Claim 15. (Currently Amended) An improved head according to ~~one of Claims 6 and 8 to 10~~

Claim 6, wherein ~~characterized in that~~ the packing pre-loading spring ~~[(83)]~~ in the stuffing box is disposed inside a split casing ~~[(81, 82)]~~ to prevent overloading the spring when in the compressed state.

Claim 16. (Currently Amended) An improved head according to Claim 8, wherein ~~characterized in that~~ a ring spacer ~~[(54, 84)]~~ is provided in the stuffing box which is bored for communication with the liquid lubricant inlet hole ~~[(58, 75)]~~.

Claim 17. (Currently Amended) An improved head according to Claim 16, ~~preceding,~~ wherein ~~characterized in that~~ said bored ring spacer ~~[(84)]~~ is formed with an annular seat ~~[(85)]~~ for a lip-type oil seal ~~[(86)]~~ arranged to contact the diameter of said tube/sleeve ~~[(61)]~~.

Claim 18. (Currently Amended) An improved head according to Claim 16 ~~above,~~ wherein ~~characterized in that~~ said bored ring spacer ~~[(84)]~~ is formed with an axial middle ledge ~~[(87)]~~ for insertion past the lip of an adjacent ring seal ~~[(88)]~~.

Claim 19. (Currently Amended) An improved head according to ~~one of Claims 1 to 3~~ Claim 1, wherein ~~characterized in that~~ a gasket ~~[(76)]~~ carrying a labyrinth pattern ~~[(77)]~~ on its inside diameter is keyed to the bottom end of the sleeve ~~[(61)]~~ for rotation therewith.

Claim 20. (Currently Amended) An improved head according to claim 1 ~~one of the preceding claims,~~ wherein ~~characterized in that~~ a shaft locking clamp ~~[(10)]~~, placed within the body ~~[(19)]~~ of the stuffing box ~~[(9)]~~, comprises a jaw pair ~~[(35, 36)]~~, one ~~[(35)]~~ pulls and one ~~[(36)]~~ pushes, operated through a screw ~~[(38)]~~ arranged to act with its end on one jaw ~~[(35)]~~ and engaged in a threaded hole formed in the other jaw ~~[(36)]~~.

Claim 21. (Currently Amended) An improved head according to Claim 20 ~~above,~~ wherein ~~characterized in that~~ said push and pull jaws ~~[(35, 36)]~~ are operated through a screw ~~[(38)]~~ arranged to act with its end on the push jaw ~~[(35)]~~ and engaged in the threaded hole formed

in the pull jaw [(36)].

Claim 22. (Currently Amended) An improved head according to ~~Claims 20 and 21 above~~
Claim 20, wherein characterized in that the stem [(40)] of the screw [(38)] is cylindrical
and fits through a seal [(39)] on the cover [(42)].

Claim 23. (Currently Amended) An improved head according to ~~Claims 20, 21 and 22 above~~
Claim 20, wherein characterized in that guide and elastic bias members [(43, 44)] are
provided between the pull jaw [(35)] and the cover [(42)].

Claim 24. (Currently Amended) An improved head according to ~~one of Claims 1 to 19~~ Claim
1, wherein characterized in that a clamp [(65)] with self-centering jaws [(66)] is associated
with the body [(73)] of the stuffing box [(60)], the jaws gripping the shaft in a wedge
contact [(68)] relationship of the outer surfaces of the jaws to the inner surface of the sliding
body [(69)] of the clamp under the action of the tighten-down screw [(67)].

Claim 25. (Currently Amended) An improved head according to Claim 24 ~~above, wherein~~
~~characterized in that~~ the wedge contact is advantageously achieved by provision of a conical
surface taper [(68)].

Claim 26. (Currently Amended) An improved head according to ~~either Claim 24 or 25~~ Claim
24, wherein characterized in that the radial gripping movement of the jaws is guided by a
prismatic fit [(95, 96)] to the clamp housing [(94)] or cover [(93)].

Claim 27. (Currently Amended) An improved head according to ~~one of Claims 24 to 26~~
Claim 24, wherein characterized in that an elastic means [(97)] is mounted between the two
jaws to open them when the clamping action is released.

Claim 28. (Currently Amended) An improved head according to ~~one of Claims 24 to 27~~
Claim 24, wherein characterized in that the shaft-gripping surfaces [(100)] are semicircular

about a center that is offset from the shaft centerline in a direction toward the opposite jaw.

Claim 29. (Currently Amended) A ~~An improved~~ clamp ~~[[10]]~~ for locking the rotary pump drive shaft ~~[[8]]~~ in crude oil wells, comprising:

jaws adapted to be closed around the drive shaft by ~~means of~~ screws,

wherein ~~characterized in that~~ said jaws are paired ~~[[35, 36]]~~, one ~~[[35]]~~ pulls and one ~~[[36]]~~ pushes, for operation by ~~means of~~ a screw ~~[[38]]~~ acting with its end on one jaw ~~[[35]]~~ and engaged in a threaded hole formed in the other jaw ~~[[36]]~~.

Claim 30. (Currently Amended) A clamp according to Claim 29 ~~above~~, wherein ~~characterized in that~~ it comprises a jaw pair ~~[[35, 36]]~~, one ~~[[35]]~~ pulls and one ~~[[36]]~~ pushes, for operation by means of a screw ~~[[38]]~~ acting with its end on the push jaw and engaged in a threaded hole formed in the pull jaw.

Claim 31. (Currently Amended) A clamp according to ~~either Claim 29 or 30~~ Claim 29, wherein ~~characterized in that~~ the stem of the screw is cylindrical and fits through a seal on the cover.

Claim 32. (Currently Amended) A clamp, according to ~~claims 29, 30 and 31 above~~ claim 29, wherein ~~characterized in that~~ between the pull jaws and the cover there are guide and elastic-reaction parts.

Claim 33. (Currently Amended) A ~~An improved~~ clamp ~~[[65]]~~ for locking the rotary pump drive shaft ~~[[8]]~~ in crude oil wells, comprising:

jaws adapted to be closed around the drive shaft by means of a screw,

wherein ~~characterized in that~~ the self-centering jaws ~~[[66]]~~ are operated to close by a wedge contact ~~[[68]]~~ relationship established between the outer surfaces of the jaws and the inner surface of the sliding body ~~[[69]]~~ of the clamp under the action of the tighten-down screw ~~[[67]]~~.

Claim 34. (Currently Amended) A clamp according to Claim 33 ~~above~~, wherein ~~characterized in that~~ the wedge contact is ~~advantageously~~ achieved by provision of a conical surface taper ~~[[68]]~~.

Claim 35. (Currently Amended) A clamp according to ~~either Claim 33 or 34~~ Claim 33, ~~wherein characterized in that~~ the radial gripping movement of the jaws is guided by a prismatic fit ~~[[95, 96]]~~ to the clamp housing ~~[[94]]~~ or cover ~~[[93]]~~.

Claim 36. (Currently Amended) A clamp according to ~~one of Claim 33 to 35~~ Claim 33, ~~wherein characterized in that~~ an elastic means ~~[[97]]~~ is mounted between the two jaws to open them when the clamping action is released.

Claim 37. (Currently Amended) A clamp according to ~~one of Claim 33 to 36~~ Claim 33, ~~wherein characterized in that~~ the shaft-gripping surfaces ~~[[100]]~~ are semicircular about a center that is offset from the shaft centerline in a direction toward the opposite jaw.